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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,299	06/16/2006	Bharat I. Chaudhary	63904A US	2652
<div>109                      7590                      11/29/2008</div> <div>The Dow Chemical Company Intellectual Property Section P.O. Box 1967 Midland, MI 48641-1967</div>				
EXAMINER				
BOYLE, ROBERT C				
ART UNIT		PAPER NUMBER		
4131				
MAIL DATE		DELIVERY MODE		
11/20/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/583,299

**Applicant(s)**

CHAUDHARY ET AL.

**Examiner**

ROBERT C. BOYLE

**Art Unit**

4131

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 5, 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The term "substantially" in claims 1 and 13 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "substantially" modifies the term 'suppresses' in claims 1 and 13.
4. Claims 5 and 15 recite the limitation "base polymer" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-10, 12, 13, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Boutillier et al., U.S. Patent 6,255,402.

7. Claims 1 and 13 disclose a composition of a polymer, free radical inducing species, and a free radical trapping species having at least two sites, the trapping species is grafted onto the polymer and suppresses degradation or crosslinking of the polymer and the composition yields a crosslinked polymer with the trapping species bound between two carbon atoms of the polymer.

8. Boutillier teaches adding a polymer with a free radical initiator and a stable free radical (column 9, lines 53-60) and the free radical may be covalently linked to the polymer (column 8, lines 28-30) and joins two polymer chains (column 3, lines 48-62).

9. Claim 1 describes a property of the composition: suppressing degradation of the polymer. Claim 13 describes a property of the composition: suppressing crosslinking of the polymer. Any composition that has a stable free radical would both suppress degradation of the polymer and inhibit crosslinking. Boutillier does not elaborate on the properties recited in claims 1 and 13. However, since the same composition that is disclosed in claims 1 and 13 is taught in Boutillier, the composition of Boutillier is expected to have the same properties as the composition disclosed in claims 1 and 13.

10. Claims 2 and 3 merely recite capabilities of the free radical trapping species: the free radical trapping site prevents degradation by chain scission or dehalogenation. The same composition is taught in Boutillier and is therefore capable of preventing degradation by chain scission or dehalogenation.

11. Claims 4, 5, 14 and 15 disclose a gel content of more than 10 wt% or more than 10 wt% of the base polymer. Claims 4, 5, 14 and 15 state properties of the composition disclosed in claims 1 and 13. Boutillier does not elaborate on the properties recited in claims 4, 5, 14 and 15. However, since the same composition that is disclosed in claims 1 and 13 is taught in Boutillier,

one would expect that the composition of Boutillier would have the same properties as the composition disclosed in claims 1 and 13.

12. Claims 6 and 16 disclose specific polymers to be used, including styrene/butadiene/styrene block copolymers and polymers of vinyl aromatic monomers. Boutillier teaches styrene-butadiene copolymers (column 7, lines 1-4) and vinyl aromatic monomers (column 6, line 50).

13. Claim 7 discloses the free radical inducing species specified as an organic peroxide. Boutillier teaches using dicumyl peroxide (column 7, lines 38-58).

14. Claims 8, 9 and 10 disclose the trapping species having two functional groups of TEMPO and derivatives. Boutillier teaches this limitation (column 5, line 31 - column 6, line 22).

15. Claims 12 and 18 disclose a polymer, a radical initiator, and a trapping species, where the resulting polymer has a specified minimum/maximum torque ratio. Boutillier teaches adding a polymer with a free radical initiator and a stable free radical (column 9, lines 53-60) and the free radical may be covalently linked to the polymer (column 8, lines 28-30) and joins two polymer chains (column 3, lines 48-62).

16. Claims 12 and 18 state properties of the composition disclosed in claims 12 and 18: the ratio of maximum torque to minimum torque. Boutillier does not elaborate on the properties recited in claims 12 and 18. However, since the same composition that is disclosed in claims 12 and 18 is taught in Boutillier, one would expect that the composition of Boutillier would have the same properties as the composition disclosed in claims 12 and 18.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday 9:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner  
Art Unit 4131

/R. C. B./  
Examiner, Art Unit 4131